DOCUMENT RESUME

ED 480 199 UD 035 183

AUTHOR	Pong, Suet-ling; Dronkers, Jaap; Hampden-Thompson, Gillian
TITLE	Family Policies and Academic Achievement by Young Children in Single-Parent Families: An International Comparison. Population Research Institute Working Paper.
INSTITUTION	Pennsylvania State Univ., University Park.
SPONS AGENCY	National Inst. of Child Health and Human Development (NIH), Bethesda, MD.
REPORT NO	PRI-WP-02-03
PUB DATE	2002-05-00
NOTE	57p.; Produced by the University Park, Population Research Institute. Additional support from European University Association and Amsterdan University, School of the Social Sciences.
CONTRACT	1-R24-HD41025
AVAILABLE FROM	Population Research Institute, The Pennsylvania State University, 604 Oswald Tower, University Park , PA 16802-6211. Tel: 814-865-0486; Fax: 814-863-8342; Web site: http://www.pop.psu.edu.
PUB TYPE	Reports - Research (143)
EDRS PRICE	EDRS Price MF01 Plus Postage. PC Not Available from EDRS
DESCRIPTORS	*Academic Achievement; Children; Disadvantaged Youth; Elementary Education; *Family Influence; *Family Programs; Foreign Countries; Low Achievement; *One Parent Family; Public Policy; Well Being
IDENTIFIERS	Australia; Austria; Canada; England; Iceland; Ireland; Netherlands; New Zealand; Norway; Scotland

ABSTRACT

This study investigates the differences in the degree of low academic achievement of third and fourth graders living with single-parent families from 11 industrialized countries. The United States ranks first among the countries compared in terms of the achievement gap for children in single- and two-parent families. After controlling for individual and family variables, the gap in the United States shrinks somewhat, but American single-parent children are still more disadvantaged than those in the other countries. Following a cross-national multilevel analysis, which includes family policy and demographic variables at the national level, the study finds single parenthood to be less detrimental where there are family policies equalizing resources between single-parent and other families, such as family or child allowances and parental leave. It also finds that single parenthood is most detrimental for academic achievement in those countries where the percentages of single-parent families are the highest. Findings suggest that policies aimed at increasing family income can offset the detrimental achievement consequences of single parenthood. (Contains 63 references.) (Author/SM)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 480 199

Family Policies and Academic Achievement by Young Children in Single-Parent Families: An International Comparison*

Suet-ling Pong
Penn State University
310D Rackley Building, University Park, PA 16803, USA
E-mail: pong@pop.psu.edu

Jaap Dronkers
Department of Political and Social Science
European University Institute
P.O. Box 2330, I-50100, Firenze Ferrovia, Italy
E-mail: jaap.dronkers@iue.it

Gillian Hampden-Thompson
Penn State University
310 Rackley Building, University Park, PA 16803, USA
E-mail: gmh140@psu.edu

(May 2002)

*Partial support for this study was provided by the Population Research Institute, The Pennsylvania State University, which has core support from the National Institute of Child Health and Human Development (grant 1 R24 HD41025). The Amsterdam School of the Social Sciences (University of Amsterdam) and the European University Institute also provided partial support. Opinions expressed here are the authors' and do not necessarily reflect those of the granting agencies. A previous version of this paper was presented at the Annual Conference of the American Sociological Association, Anaheim, August 2001.

UD 035183

BEST COPY AVAILABLE

Family Policies and Academic Achievement by Children in Single-Parent Families: An International Comparison

Abstract

We investigate the differences in the degree of academic achievement deficient of third- and fourth-graders living with single-parent families from 11 different countries. The U.S. ranks first among the countries we compare in terms of the achievement gap for children between single and two-parent families. After controlling for individual and family variables, the gap in the U.S. shrinks somewhat, but American single-parent children are still more disadvantaged than those in the other countries. Following a cross-national multilevel analysis, which includes family policy and demographic variables at the national level, we find single-parenthood to be less detrimental where there are family policies equalizing resources between single-parent and other families, such as family or child allowances and parental leave. We also found that single-parenthood is most detrimental for academic achievement in those countries where the percentages single-parent families are the highest. We suggest that policies aiming at increasing family income can offset the detrimental achievement consequences of single-parenthood.

Family Policies and Academic Achievement by Young Children in Single-Parent Families: An International Comparison

During the last two decades, a burgeoning research literature documents the educational consequences of single-parenthood in the U.S. and several other Western societies. Most research linking single-parenthood to children's school performance has been done within single nations. We know too little about the degree and possible sources of international variation in the impact of single-parenthood on children's education. Comparative research is essential if we are to understand the relative importance of public policy, which may mitigate or exacerbate the educational hurdles associated with living with a single-parent. In this paper, we investigate whether the disadvantages of single-parenthood vary according to a society's safety net systems. We specifically test whether living with a single parent is less detrimental in those countries making greater investments in social welfare. Our study is unique because we are able to analyze comparable data from eleven different nations. These data allow us to fill the gap in comparative knowledge on single-parenthood and children's school performance.

In the following we first review the findings from single-nation studies of single-parenthood and children's academic achievement. Next, we describe the policy environments of the countries selected for this investigation. We then give the theoretical framework, describe our data and statistical models, and finally, present results from our data analysis.

RELEVANT LITERATURE

Studies in the U.S.

Social science researchers in the U.S. have come to a consensus that, although some children living in single-parent homes do well in school, most of them face a higher risk of

low academic achievement and becoming dropouts (Amato, 2001; Astone & McLanahan, 1991; Zill, 1996). Various explanations have been offered for this detrimental effect of single-parenthood on children's education. One explanation stresses the inter-parental conflict that is too often generated as marriage dissolves, and which inflicts psychological stress upon children (Amato, 2001; Amato & Keith, 1991). More widely cited are two other explanations: one emphasizes the meager material resources of single-parents, while the other underscores the fact that the time pressures of single-parents make them less able to participate in their children's schooling (Astone & McLanahan, 1991; Downey, 1994; Entwisle & Alexander, 1995; Entwisle, Alexander, & Olson, 1997; Lee 1993; McLanahan, 1985; McLanahan & Sandefur, 1994; Pong & Ju, 2000; Sandefur, McLanahan, & Wojtkiewicz, 1992).

Families with lower income possess fewer educational materials at home, and can less afford enrichment activities outside of schools. And, parental involvement in the child's schooling is low, there is less supervision and lower expectation of the child. Such lower monetary and non-monetary resources are two possible reasons why students from single-parent homes tend to have lower achievement as compared with students from two-parent families.

Lending support to these associated explanations is the finding that, when monetary and non-monetary resources are statistically controlled, the impact of single-parent family is reduced, and even disappears in some studies (Cooksey, 1997; Smith, Brooks-Gunn & Klebanov, 1997). After controlling for resources to children, the net effect size of the negative impact of an individual's membership in a single-parent family is small as compared with such other family background variables as parental education and income (McLanahan & Sandefur, 1994).

European Studies

There have been few comparative studies on single-parent families and children's well-being. In Europe, single-nation case studies began to appear in the early 1980s. A study in Switzerland compared the educational and occupational life course of children from single-parent and two-parent homes, and found lower educational attainment and earlier transition to work for children from single-parent families (Oggenfuss 1984). In Sweden, children residing with a single mother had lower math scores than children living with two parents. Early residence with a single mother had adverse consequences in later life for Swedish children, lowering their educational attainment (McNab & Murray, 1985; Murray & Sandqvist, 1990). In the case of Britain, Cherlin et al. (1991) found a detrimental effect of divorce on children's math and reading scores at age 11, after controlling for possible confounding factors. Similarly, Kiernan (1992) found that single-parenthood increased English children's likelihood of dropping out of school.

In the Netherlands, one study found that secondary school students from single-parent families had lower intelligence and scholastic scores, and received lower evaluations from teachers (Bosman & Louwes, 1988). A later study found that the negative effect of living in a single-mother family increased from the late 1970s to the late 1980s (Dronkers, 1994). Dutch survey data collected in 1990 further confirmed the detrimental consequences of single-parenthood, particularly when caused by divorce, on various measures of children's well-being (Borgers, Dronkers, & Van Praag, 1996). Parental conflict appears to be a major mitigating factor in the relation between a child's well being and the r sic'ence in single-parent families (Dronkers, 1999).

Because most previous American and European studies have been conducted in a single country, it is still unclear whether there are differences in the effects of single-parenthood between countries. The rare exceptions are the studies by Cherlin and his colleagues (1991) and by Joshi and her colleagues (1999). The latter study applies multi-level modeling on each of the two national longitudinal samples from Great Britain and the U.S., and the authors found remarkable similarities between the two countries in the relationship between children's family history and their educational and behavioral development (Joshi et al., 1999). By contrast, a recent study found significant differences in the intergenerational transmission of divorce risks in the former East and West Germany (Engelhardt, Trappe & Dronkers, 2002). The variation in findings from previous studies underscores the importance of national context in mediating the relationship between single-parenthood and children's schooling.

SELECTION OF COUNTRIES FOR COMPARISON

In order to reveal the effect of policy we attempt to "control" for cultural influence. Therefore, in this study we compare countries with similar Western cultural traditions. Along with the U.S., we selected 10 other industrialized countries for comparison: Australia, Austria, Canada, England, Ireland, Iceland, Netherlands, New Zealand, Norway, and Scotland. These countries can be grouped into four categories: 1) North American nations of Canada and the U.S.: 2) Pacific Rim countries of Australia and New Zealand, and 3) Nordic states of Norway and Iceland, and 4) Western European nations of Austria, the Netherlands, Great Britain (England, Scotland), and Ireland.

We selected these countries for several reasons. Canada is chosen because of its proximity to the U.S., which has strong influence on the Canadian economy. Both the U.S.

and Canada are similar to Australia and New Zealand in their culture and linguistic heritage. These four societies were once the colonies of Great Britain, and most of their early immigrants originated from England, Scotland, and Ireland - three other industrialized countries we selected.

For a clear policy contrast with the U.S., we also selected Austria, Norway, Iceland, and the Netherlands. These highly developed welfare states have a long history of family policies aimed deliberately at redistributing wealth to achieve the goal of equality. Norway and Iceland share many common cultural traditions, and these commonalties have been strengthened by the Nordic Council, which has promoted policy collaboration among the Nordic states (Kjellin, 1980). The Netherlands shares many similar family policies with the Nordic states, although these policies are less developed (de Bie, 1980). Austria provides an example of a European welfare system where the Catholic parties are historically strong while the parties of the left remain weak (Kjellin, 1980).

The following section outlines briefly the family policy environment for each nation we select. Family policy has been defined in various ways (for a review, see Bogenschneider, 2000); we focus on those family policies that support family income, which may include family and child allowances, tax concessions, and maternity and parental leave and benefits. Since this research analyzes eleven nationally representative samples of young children surveyed in 1994-1995, the policies most relevant to these children would be those found between the late 1980s and mid-1990s. Thus, our discussion of national family policies describes policies in force between the mid-1980s and mid-1990s.

NATIONAL POLICY ENVIRONMENTS

United States

The U.S. has never had an *explicit* national and comprehensive family policy. Family policies are *implicitly* governed by legislative measures. Before mid-1990s, the federal Aid to Families with Dependent Children (AFDC) was the primary source of support for children in single-parent families.[1] AFDC was cash assistance funded by the federal government with contributions by the states. This cash benefit was means-tested, and it catered to single-parents with incomes below the poverty line.[2]

In addition to a cash benefit, AFDC recipients could receive child care tax credits, and this was intended to help single parents to make the transition from welfare to work. No other national program specifically assisted single-parents. However, because most single-parent families were poor, other programs that provided for the poor maybe relevant to our finding. For example, working single parents with children under 19 were eligible for the Earned Income Tax Credit (EITC) if their earnings were low. In addition to EITC, three other means-tested programs - food stamps, housing assistance, and Medicaid - provided poor single-parent families with their basic needs of food, shelter, and medical care.

The U.S. is unique among the nations we study in that it has never had a universal child or family allowance,[3] nor is there any publicly-funded child care provision (Baker, 1995). The U.S. is also one of a handful of developed countries that has no national maternity, paternity, or parental leave policy. It does have an unpaid family leave policy - the Family and

---

[1] Welfare policy providing for poor single parents is now left entirely in the hands of the state. Today, cash assistance payments for children under the Temporary Assistance for Needy Families (TANF) program vary greatly by states. The only cash family benefit that is near universal is provided under the federal tax income, as low-income families with dependent children are provided with income tax deductions (Bertelsmann Foundation, 2001).

[2] The AFDC amount varied widely by states, ranging from US$150 per month in Mississippi for a family of three, to $750 per month in Alaska.

[3] There are tax allowances contingent on the presence of dependent children, but poor families who pay no tax do not benefit from the tax allowances.

BEST COPY AVAILABLE

Medical Leave Act (FMLA) enacted only in 1993 – which provides 12 weeks of job-protected unpaid leave for birth, adoption, foster care, or personal or family illness (The Clearinghouse, 2001). Overall, the lack of a comprehensive vision for families in the U.S. reflects the individualistic principles of the political foundations of the U.S. government, a strong work ethic, and laissez-faire economic policies (Bogenschneider, 2000).

Canada, Australia, and New Zealand

Formerly British colonies, Australia, Canada, and New Zealand have been referred to as the "neo-Europe's" (Crosby, 1986). Their family policies are similar in their patterns and values (Kamerman & Kahn, 1997).

No explicit family policy existed in New Zealand during the 1980s and 1990s. Like the U.S., New Zealand administers cash payments to single parents through its tax system (The Clearinghouse, 2001). Since 1986, New Zealand's family policies are all means-tested, and narrowly targeted toward the poor. There is a means-tested social assistance benefit for lone mothers (The Clearinghouse, 2001). Paid maternity or parental leave is not available, but unpaid maternity leave is available to women for 14 weeks, unpaid paternity leave up to two weeks, and extended leave due to childbirth up to 52 weeks (Kamerman & Kahn, 1997; United Nations, 2000).

Canada's federal government had long provided universal family allowances until 1993, when family allowances were replaced by a means-tested tax benefit (Baker 1995). There is no specific program in Canada for single mothers. However, as elsewhere Canadian single parents are likely to be lone mothers who are poor. The means-tested nature of child benefits gives single-parent families higher family allowances than two-parent families. Also, poor single parents who participate in the labor force are eligible for cash supplements to their

earned incomes. The basic Canadian maternity benefits are 55 percent of wages paid for 15 weeks. In 1990, 10 weeks of parental leave benefits was introduced. This can be divided between the mother and the father. Single parents were also provided with a tax credit for the first child (Phipps, 1999; United Nations, 2000). Child care for low-income families is subsidized by the provincial governments, although the supply of subsidized places falls short of with the demand of them (Bertelsmann Foundation, 2001).

In Australia, there is a means-tested family assistance in the form of tax relief and cash payments for dependent children up to the age of 16. Single parents with dependent children are provided with a means-tested parental payment. Although Australia relies heavily on means-testing for most social provisions, the benefits are mainstream rather than residual payments. Unpaid leave for a newborn or adopted child has been 52 weeks in Australia since 1994. Paid maternity leave exists only for Commonwealth employees (12 weeks), state-government employees (6-12 weeks), and some parts of the private sector. There are leaves for a sick family member, as well as for sickness and bereavement.

Nordic States: Norway and Iceland

In contrast to the U.S. and the "neo-Europe's", family policy has a very long history in Western Europe, particularly the five Nordic states of Denmark, Finland, Iceland, Norway, and Sweden. The dominant principles of family policy in the Nordic welfare states are universalism, social solidarity, and equality across social class, with a strong emphasis on the protection of the child and the equalization of men and women (de Bie, 1980). The provisions to families with children often include family allowances, parental leave, public childcare, housing subsidy, and free medical care.

In Norway, family allowance is universal, tax-free, financed out of general revenue, and is available to all children under the age of 16. It is paid to the mother, and lone mothers are entitled to an allowance for one more child than they actually have (The Clearinghouse, 2001). The most important family policy for single parents is the transitional allowance. It is intended for lone parents who cannot support themselves. This cash benefit is available as long as the youngest child is under 10 years of age (The Clearinghouse, 2001).

Maternity leaves and benefits in Norway are also generous. Since 1993, parents have been entitled to a parental leave for either 52 weeks at 80 percent wage replacement, or 42 weeks at 100 percent wage replacement. Parents may choose to split the paid leave period, although the mother is required to take 9 weeks of maternity leave and 4 weeks of paternity leaves are reserved for the father (The Clearinghouse, 2001; Eydal, 2001). In addition, unpaid leave is provided for women who breastfeed their infants. Parents with a child younger than 12 are each entitled to 10 days leave annually for the child's illness. A lone mother is entitled to a birth grant to each new birth, and it is in addition to the usual maternity benefits she may receive (Phipps, 1999).

Family policy in Iceland includes child benefits that are deductible from the taxes the family is supposed to pay. If the child benefits are greater than the taxes, the family will be paid the difference. Parts of the child benefits are means-tested, and the proportion of means-tested child benefits has increased over time. In 1988, it was 23 percent, and it grew to be 44 percent in 1995.[4] Single-parent families have always received greater child benefits than have two-parent families (Eydal, 1997). Single mothers are also helped by other policies such as parental leaves and public childcare. Icelandic women have since 1990 been entitled to 6

[4] The authors thank Gudny Bjork Eydal for providing the information via email.

months of paid maternity. Since 1987, fathers also have the right to parental leave up to 6 months.

Western Europe: the Netherlands, United Kingdom, Ireland, and Austria

The Netherlands is similar to the Scandinavian countries in terms of its egalitarian political philosophy, although its family policies came much later. Until the policy shift in 1996, the welfare state provided a number of social welfare benefits under the 1965 General Social Assistance Law (Knijn, 1994). Some of its salient features included a guaranteed minimum wage and public supply of essential services, such as housing, education, and medical care. There is universal child allowance, and the benefits increase substantially as family size increases. Maternity leave benefit are available for 16 weeks with 100 percent wage replacement, and an additional 6 months of unpaid parental leave (paid, in the case of government employees) was possible for employees, both fathers and mothers, with children under the age of 8 (Baker, 1995; Van Drenth, Knijn, & Lewis, 1999). There is no special benefit for single parents in the Netherlands. However, its social assistance payments are generous enough to enable lone mothers to stay home to care for their children (Phipps, 1999). In the 1980s, the social security system succeeded in lifting 90 percent of single-parent families out of poverty (Van Drenth, Knijn, & Lewis, 1999). Under this social security system, the minimum income, designed to replace male income, was guaranteed until lone parents' children were 12 years old (Van Wel & Knijn, 2001).

The British government's approach towards family policy is implicit, as there is no single minister or Department that deals with family issues. But Western Europe has shaped certain aspects of family policy in Britain. For example, the European doctrine of gender equality has helped ensure that the social security system allows equal entitlement to men and

women (Clark & Henwood, 1997). Like its European counterparts, Britain provides paid maternity leave. It is 40 weeks with 6 of those weeks paid at 90 percent of previous wages. This is the shortest period of maternity benefits in Western Europe (Baker, 1995). Unlike other Western European countries, there is no parental leave without loss of pay. Child allowance, which is a weekly payment for all dependent children, is at a higher rate for the oldest or only child. Non-means-tested, child allowance is paid to lone parents at higher rates than to married couples (Bradshaw et al., 1996). In addition to child allowance, single parents are entitled to a non-means-tested "one-parent benefit".

Ireland is unique among the 11 countries we study in that divorce is illegal. However, single-parenthood can result from divorce outside of the country, which is recognized by the Irish government, or from union dissolution among cohabiting couples. In Ireland single-parent families are more prone to poverty than the average households (Kennedy & McCormack, 1997). Like other countries in the European Union, the Irish government has provided paid maternity leave and child allowances. Under the 1994 legislation, maternity leave is up to 14 weeks, with replacement of 70 percent of salary. Universal child allowances are paid to the mother for children up to 18 years old. Beginning in 1990, the means-tested lone-parent allowance is provided to single parents until the child is 18 years old, or 21 years if in full-time schooling. Tax concessions are available to lone parents. Working single parents are eligible for the family income supplements if their earnings are low, and are eligible for housing assistance if they are on welfare.

Austria has a generous social protection system. Family allowances were provided universally based on the number and age of children. In a comparison of 20 countries, Austria ranked 6th as having the most generous universal child benefit scheme (Bradshaw, 1996). A

mother who cares for her infant in the first year is entitled to the infant allowance. The birth payment for each newborn is means-tested. Maternity leave is 16 weeks, and women are paid 100 percent of their prior earnings. At the end of the maternity leave, either parent can take an extended parental leave until the child's 2nd birthday, or a part-time leave until the child's 3rd birthday. The benefit is paid at a flat rate. If an unemployed mother fails to obtain a child care place, she is entitled to a 3rd year of paid parental leave. Also, parents can take paid leave to care for a sick child (The Clearinghouse, 2001). These parental leave policies are especially important policy to single mothers who need the time more than married mothers.

RESEARCH QUESTIONS AND A CONCEPTUAL FRAMEWORK

Given the varied family support and parental leave policies, we address the following questions in our study. First, how varied is the gap in academic achievement between children who live in single-parent families as opposed to those who live with two biological parents? Second, do academic differences between children from single-parent families and those from two-parent homes persist after family resources are taken into account? Third, among the 11 countries we selected, does the overall effect of single-parenthood vary according to national demographic characteristics and family policies?

Figure 1 outlines our conceptual framework. We expect that different policy environments influence the relationship between single-parenthood and children's academic achievement through changing family's disposable income and parental time inputs. Countries with strong family policies offer a range of generous provisions, such as child and family allowances, child benefits and family transfers, tax benefits to lone parent, and maternity leave benefits. In these countries, single parents have more economic resources for their children's education than do their counterparts in nations with weaker family policies. They

also receive more release time from work to care for their infants or young children, affecting the child's cognitive development as the child grows, which in turn has an impact on the academic achievement.

It is well known that income and parental time are important factors in a child's school performance. Abundant research in the U.S. and abroad has linked children's academic achievement with their family background (see, for example, Coleman, 1966, Shavit and Blossfield, 1993). Children from families with higher income or other physical resources have greater access to educational materials, educational experiences (such as travel), and quality schools in wealthy neighborhoods. In addition, when parents put in more time in caring and monitoring their children, they have better relationships with them. This parent-child relationship – the social capital, as Coleman (1988) called it - is positively related to the child's academic achievement in school (Dronkers, 1999; Steinberg, 1996; Teachman, 1996). We hypothesize that children residing in single-parent families are less likely to suffer from educational disadvantage in countries with stronger family policies than they would be in countries with weaker family policies.

National family policies may vary according to certain national characteristics, particularly national demographic contexts. In fact, the demographic context of a nation and its family policy is likely to have a reciprocal relationship. On the one hand, generous family policies may encourage cohabitation and eventually produce greater proportion of lone parents, as in the case of Scandinavian countries. Also, if a country has a large proportion of single parents who are more politically organized than are married parents, single parent can demand greater resources from the government. In these cases, a country's proportion of

single-parent families is positively associated with the generosity of the nation's family policies towards single parents.

On the other hand, the growth in single-parent families, particularly the growth in teen motherhood, could reduce the tolerance and sympathy towards single parents, and subsequently trigger policy reforms. In recent decades, Canada, the Netherlands, United Kingdom, and the United States have responded to the rise in single-parenthood by replacing universal child benefits with means-tested programs, and by more stringent welfare benefits for low-income single-parent families (Baker, 1995; The Clearinghouse, 2002; Van Drenth, Knijn & Lewis, 1999). Thus the prevalence of single-parenthood may be negatively associated with the generosity of family policies. Whichever the direction of association between these two variables, in our study we need to control for a country's demographic characteristics because they may confound the results for family policies.

Inter-parental conflict generated as a result of a divorce often inflicts psychological stress upon children, which affects adversely children's school performance, conduct, psychological adjustment, self-concept, and social relations (Amato & Keith, 1991). The common wisdom calls for a negative relation between such psychological stress and the demographic context of single-parenthood. The argument is that when divorce becomes common place, there is fewer stigmas attached to residing with single parents. Therefore, children from single-parent families may have higher level of psychological well-being in countries where there is high percentage of families headed by single parents.

However, recent empirical research suggests the contrary because, as divorce becomes prevalent, the nature of marital dissolution will change. In the U.S., when divorces were rare, only the extremely dissatisfied would seek a divorce. These were families with high parental

conflict. When divorces became prevalent, many more moderately, rather than extremely, dissatisfied individuals would also divorce their spouses (Booth, 1999). In other words, many families with low levels of parental conflict will end in a divorce when divorce becomes more common and widely accepted. Compared to high conflict-ridden families ending in divorce, families with relatively little parental conflict but end in divorce are more damaging to children's psychological well-being, according to several studies on parental conflict, (Amato et al., 1995; Dronkers, 1999; Hanson, 1999; Jekielek, 1998; Morrison & Coiro, 1999). These research findings suggest that, in nations where the divorce rates are high (i.e. larger number of families with relatively little parental conflict ending in divorce), children from single-parent homes suffer greater psychological stress than do their counterparts in countries where divorces are relatively rare (i.e. larger number of families with serious parental conflict ending in divorce). Thus, the overall demographic trend of single-parenthood tend to be negatively related to the academic achievement of children from single-parent homes.

In sum, because of the potential correlation between family policies and demographic contexts, and because demographic contexts may predict achievement gap between children from two- and single-parent homes, demographic contexts will confound the effect of family policy on children's achievement outcomes. To account for this potential spurious effect, we will control for the confounding effect of national demographic contexts.

DATA

Two data sources are used to address our questions. The first is the Third International Math and Science Study (TIMSS). TIMSS was conducted in 1995 under the auspices of the International Association for the Evaluation of Educational Achievement (IEA). TIMSS is the largest international survey ever done: the study tested a half million students from 41

countries. Separate questionnaires for students, teachers, and school administrators provide comprehensive information on various learning environments, inputs, and outcomes. The TIMSS sample design was a two-stage cluster sample, with schools as the first stage and classrooms within schools as the second stage of selection. For a complete description of the survey design, see *User's Guide for the Third International Mathematics and Science Study (TIMSS) and U.S. Augmented Data Files* (1997).

In this article we investigate students in Population 1 of the TIMMS: students enrolled in the two adjacent grades that contain the largest proportion of 9-year-olds at the time of the survey conducted in 1995. In most countries, these are the equivalent of American 3rd or 4th grade students. The advantage of studying young children is that they are still in school in most parts of the world, and the problem of selectivity bias, as a result of children leaving school for work, would be minimal. Also, the school system is less differentiated at the 3rd and 4th grade levels. Our international comparison will be less affected by the differentiated curriculum. We analyze 11 countries in TIMSS population 1 survey. All data for our study are drawn from the student questionnaire.

The second data source is the country-specific characteristics we collected from various books and websites for the 11 countries we studied. In this paper we present results of two sets of indicators most relevant to this study. The first set includes policy indicators, which include maternal and parental leave policies, policies of child and family allowances, and tax benefits to single-parents. The second set includes demographic indicators measuring the prevalence of single-parenthood, divorce, and of teenage motherhood.

VARIABLES AND MEASURES

Academic Achievement, the dependent variable in our analysis, is the child's math and science achievement test score. A scaled score based on 5 tests measures these. Based on Item Response Theory (IRT), TIMSS provides 5 plausible values for each achievement test score. We present results for the first plausible value, which has been widely used for international comparisons. Analyses of other plausible values not presented here yield similar results.

Our major independent variable is *single-parenthood*. The information comes from the question: "Do each of these people live at home with you most or all of the time?" Students were asked to state "yes" or "no" to the list: mother, father, one or more brothers, one or more sisters, stepmother, stepfather, one or more grandparents, another relative or relatives such as uncles, aunts, cousins, etc., and another person or persons (not relatives). Using the information we constructed three dummy variables: single-parenthood, stepfamily, and guardian family. Single-parenthood refers to residing with either the father and not the mother, or the mother and not the father. Stepfamilies are families with either the stepmother, or the stepfather, or both. Guardian families are families without the mother, the father, or a stepparent. The reference group is residing with two parents.

To isolate the effect of single-parenthood on individual children's academic achievement, we need to take into account children's family resources. Unfortunately the TIMSS Population 1 survey did not solicit information on parental education, occupation, or income. However, several indicators can be used to proxy the amount of monetary or non-monetary family resources available to the child. One is the *number of books* at home. Another is the *number of possessions*, which is based on the list of items students reported they have at home (including a computer, an encyclopedia set, a stereo system, a video camera, and 3 or more cars, vans, small trucks). The third indicator is *immigrant status*, which

tends to be associated with lower socioeconomic status. Finally, we include *household size*, measured by the total number of people living with the child. This indicator is a proxy of the number of siblings the child has. Previous research has shown a negative relationship between sibship size and children's educational achievement.

Three other control variables are included in the multivariate analysis. These are the child's *age*, *gender* (being girl), and the *grade level*. The grade levels indicate whether the child is in the upper grade. In the U.S. and most other countries in this study, the upper grade is the 4th grade.

At the country level, we analyze indicators of family policies that aim at supporting family income and parental time inputs. These are: family or child allowance, universal child benefits to lone parents, benefits in tax and social security to lone parents, family transfer per child, social expenditure per GDP, maternity leave benefits, maternity leave duration, and parental leave. The national indicators also include 5 demographic indicators that measure the prevalence of divorce, teen motherhood, and single-parenthood. These are crude divorce rates, the percentage of births to mothers under 20 years old, and the percentage of lone-parent families, of lone-mother families, and of lone-father families. Detailed description of each family policy variable is provided in Appendix A.

ANALYTICAL STRATEGY

We first treat each country as a separate case in our analysis. Ordinary least squares regression is used to gauge the effect of single-parenthood on math and science achievement for each country. Next, we combined data from all 11 countries in a single analysis to see if there are variations among countries in the association between single-parenthood and academic achievement.

We use three methods in our analysis of all 11 countries. The first method is OLS regression for each country separately. The second method is a "fixed-effects model," and it is equivalent to a saturated hierarchical linear model (HLM) without random coefficients. In this model, 10 dummy variables representing each nation, with the US as reference category, are used to absorb all the observed and unobserved characteristics of each nation, allowing the random error to be independent of the observed variables. In addition to the dummy variables representing nations, 10 interaction terms are included in the model. Each term indicates the interaction between the nation variable and the variable of single-parenthood at the individual student level. From these interaction terms we will be able to compare the achievement gap between children from single-parent and those from two-parent families, in the U.S. and other countries. We will make the comparison both with and without adjustments for the differences in individual-level family resources.

Thirdly, we build a two-level "random-effects" HLM model (Bryk & Raudenbush, 1992). The unit of analysis in the first-level model is the student, and the unit of analysis in the second-level model is the nation within which the student is nested:

$$(\text{Achievement})_{ij} = \beta_{j0} + \beta_{j1}(\text{family structure})_{ij} + \beta_{j2}(\text{other})_{ij} + R_{ij} \qquad (1)$$

$$\beta_{j0} = \gamma_{00} + \gamma_{01}(\text{family policy})_j + \gamma_{02}(\text{context})_j + U_{j0},$$
$$\beta_{j1} = \gamma_{10} + \gamma_{11}(\text{family policy})_j + \gamma_{02}(\text{context})_j + U_{j1} \qquad (2)$$

Unlike the fixed-effects model where all coefficients are specified as fixed, here some coefficients are specified as random. We assume that the parameter residual, U_{j0} and U_{j1} are unrelated to the γ's. U_{j1} may not be specified if there is no estimated parameter variance of β_{j1}. Our primary interest is to estimate γ_{11} and γ_{02}, which are predictors of β_{j1} - the achievement gap between children from single-parent families and their counterparts from two-parent

BEST COPY AVAILABLE

homes. We will examine the influence of various family policies and the demographic context of single-parenthood, and report the coefficients of γ_{11} and γ_{02}.

One problem of the HLM model is that we have few units at the second or country level. Without missing cases, we have 11 cases at the country-level analysis. Missing data arise from the fact that there is no available comparable data for Iceland for most variables in our study. In two cases, we do not find comparable data for Canada as well. Thus our HLM model, which is based between 9 and 11 second level units, has low statistical power and the parameter variances are estimated with large imprecision. Although some methodologists have suggested that the minimum number for running a random coefficient model is 10 (Snijders & Bosker, 1999, p.43-44), we believe that HLM results for 9 and 11 second-level units are equally unstable. Despite this possible statistical instability, our HLM results are quite consistent with the results from the model using fixed parameters (not presented). For simplicity of presentations, we show the HLM coefficients only.

RESULTS

Demographic Contexts

Figure 2 and 3 presents the demographic characteristics of the 11 countries we study. In 1994, the divorce rates were highest in the U.S. and Australia, followed by England and Scotland. The lowest divorce rates are found in Iceland. Divorce is illegal in Ireland, and there is no record for it. The U.S. also ranks first in the percentage of births to teen mothers. The percentage is 1.7 times greater than that in New Zealand, the second-ranked country in terms of teen births. Given the high rates of divorce and teen births, it comes as no surprise that the U.S. has the highest percentages of lone-parent, lone-mother, and lone-father families. Again,

New Zealand ranked second in the percentage of single-parenthood. Ireland has the lowest proportion of lone-parent families, lone-mother and lone-father families.

(Insert Figure 2 and 3 about here)

Descriptive Analysis of TIMSS

The figures of single-parenthood are slightly different when we examine the family structure of the 3rd and 4th graders in TIMSS. Table 1 presents, for each of the 11 countries, the percentages of children living with two parents, with single-parents, with stepparents, and without any parent. As can be seen in the table, two-parent families are the dominant family type for these children who are about 9 years old. The percentages of two-parent families are highest in the Netherlands, and lowest in Iceland and the United States. Single-parent families are predominately single-mother families in all 11 countries; the share of single-father families among all family types ranges only 1-3 percent. Iceland, where cohabitation is prevalent, houses the largest percentage of single-parent families (22 percent), followed by the United States (19 percent) and Scotland (18 percent). Other forms of non-two-parent families, i.e. stepfamily and guardian family are relatively rare, and constitute less than 10 percent of all families in which a 3rd- or 4th- grade child resides.

(Insert Table 1 about here)

Family Policy Context

Next, in Table 2 we present key indicators of family policies aimed at improving family income and parental time inputs. In the first row, family or child allowances are government payments that usually come as a weekly, bi-monthly, or monthly check mailed to the mother or official guardian of dependent children. Benefits are often tax free, and the amount and eligibility often depends on the age of the child (Baker, 1995). Family allowances

can be a major source of economic support for low-income single parents. In our selected countries, Austria paid the highest family allowance, equivalent to 11.3 percent of the average male wages in manufacturing in 1990. Family allowances in Norway, the Netherlands, England, and Scotland were in the range of 6-9 percent. Smaller allowances are evident in Canada, Australia, and New Zealand, which ranged between 2-3 percent. The U.S. is the only country that has never paid family or child allowances.

As seen in the second row of Table 2, some countries offer universal child benefits or allowances that are paid regardless of family income. Other countries pay means-tested allowances, which depends on family income. Still other countries pay a combination of both. Most countries in our sample paid universal child benefits to lone parents with two children in 1994. Norway and Austria paid the highest amount (169 and 124, respectively), relative to average male earnings within each country, in Sterling purchasing power parities, while Canada and New Zealand abolished their universal programs prior to 1994.

The third row in Table 2 shows the difference in the amounts paid in tax and social security contributions by lone parents and those contributions by married couples in 1994. The larger the positive values, the greater the tax system makes extra allowances for lone parents. In Austria, England, Scotland, Ireland, and New Zealand, there was no difference in the tax treatment of lone parents, as compared to married couples. In the U.S., Australia, and Norway, the difference is negative, meaning that lone parents paid more direct tax than married couples on the same earnings. Among these three countries, the difference was highest in the U.S. The positive figure for the Netherlands suggests that the Dutch tax system treated lone parents more generously than it did married couples.

When considering all universal or means-tested allowances, and tax deductions for children, in the early 1990s Austria had the highest amount of family transfers per child, followed by the Netherlands. Ireland and the U.S. had the lowest family transfers. By comparing social expenditure across countries, we may capture the differences in government investments in other child-related benefits, such as child care, housing, and medical costs. Here we can see that Norway and the Netherlands had the greatest government social expenditures per GDP in 1990.

Regarding maternity leave, its duration is the highest in Australia offering 52 weeks. However, poor mothers are unlikely to take advantage of this policy because the leave is unpaid. By contrast, Norway has the most generous policy providing mothers with 38 weeks of maternity leave with 100 percent salary replacement. Austria, Iceland, and the Netherlands also pay the mother their full salary during the leave period. According to Bradshaw et al. (1996), the parental leave package is the most generous in Austria and Norway, followed by the Netherlands.

(Insert Table 2 about here)

Results from OLS Regression Analysis

Table 3 shows the OLS regression results of the effects of single-parent family on math and science achievement for each country separately. Model 1 has the family structure dummy variables - single-parenthood, stepfamily, and guardian family, and the control variables of age, gender, and grade level. Model 2 includes, in addition to the variables in Model 1, the family resources variables: the number of books, the number of possessions, household size and immigrant status. All regression coefficients shown in the table are

parameter estimates for the dummy variable of single-parenthood, with two-parent family as the reference group.

(Insert Table 3 about here)

With the absence of the family resources variables in Model 1, the effect of single-parenthood is significantly *negative* for most countries, for both subjects. With the exception of Austria, all the insignificant coefficients bear a negative sign. The largest effect size, indicated by the size of the coefficient as the proportion of a standard deviation of the test score being analyzed, is found in the U.S. (see Appendix B for the means and standard deviation of math and science scores for each country). It is about one-third of a standard deviation of the math score and .35 of a standard deviation of the science score. Next to the U.S. are New Zealand and Canada, who also consistently show large effects of single-parenthood: .26 and .25 of a standard deviation for math, and .31 and .26 of a standard deviation for science, respectively.

Including family resources variables does not change this large picture. The effects for Ireland and the Netherlands become weaker, but are still significant at .10 level. The effect size is again largest in the U.S. It is consistently minute in Iceland and Austria.

Results from Fixed-Effects Models

Single-country analysis does not definitively prove that the impact of single-parenthood differs *across* countries. Nor do we know whether country-level characteristics can account for the across-country differences. Our next step is to build fixed-effects models to compare the impact of single-parenthood among nations. Table 4 presents the results. In both Models 1 and 2, family structure is measured by three dummy variables of single-parenthood, stepfamily, and guardian family. Two-parent family is the reference group. In

each model, the countries are entered as dummy variables, with the U.S. as the reference nation. We are most interested in the interaction between single-parenthood and the country and we shall focus our attention on those coefficients, alongside single-parenthood's main effects.

As can be seen from Model 1, American children living with both parents (the reference group) score higher in *both* math and science than do children who live with a single-parent, a stepparent, or a guardian. This negative effect associated with single-parenthood drops somewhat, but remains large after family resources are controlled, as shown in Model 2, Table 4.

Do the countries differ in this negative effect of single-parenthood? This can be seen from the interaction term between the country and single-parenthood. From Model 1 we can see that the disadvantage in math achievement associated with single-parenthood is most severe in the U.S. (the reference group) among all 11 countries. This is shown by the positive interaction terms in other countries: the negative effect of single-parenthood is offset by the positive amounts of the interaction term. For example, the effect of single-parenthood in England is -18.61 (i.e. –29.01 + 10.40).

Part of the reasons why children from single-parent homes face greater hardship in the U.S. is that the family resource gap between single-parent and two-parent families is larger in the U.S. than in other countries. When family resources variables are controlled, in Model 2, Australia, Canada, England, Scotland, and Norway are not different from the U.S. in terms of the math gap between single-parent and two-parent families. For science achievement, after family resources are controlled, Canada, England, and New Zealand are not different from the U.S. In comparison with the U.S., the math gap is significantly smaller (at <.05 level) in four

countries: Austria, Iceland, Ireland, and the Netherlands. And the science gap is significantly smaller (at < .05 level) in six nations: Austria, Australia, Iceland, Ireland, the Netherlands, and Norway.

(Insert Table 4 about here)

Results from Random Effects Hierarchical Linear Modeling

To study the relation between family policy and the single-parent effect, we build random effects HLM models. In Table 5, each coefficient comes from an HLM model in which a country-level variable is included in the second-level equation. That is, γ_{11} in equation (2) discussed above. At the individual level, we include the family structure variables, the control variables, and the family resources variables (see Models 2 of Table 4). We include the family resources variables, even though by controlling for these resources we underestimate the family policy effects. It is because family policy redistributes financial resources to poor families with children, including those with single parents. Part of the family resources we control for might have been a result of this redistribution. Therefore, the parameters at the country level may be underestimated, but nevertheless give a conservative, lower bound estimate of family policy's influence on the effect of living in a single-parent family.[5] Because of the few countries in our sample, our estimate of γ_{11} has low statistical power, and adding all additional country-level variables in one step would further reduce its reliability. Therefore, it is necessary to examine one policy or demographic variable at a time (table 5) before we increase the number of country-level variables in subsequent analyses (table 6 & 7).

[5] Appendix C gives the results of the HLM analyses without control for family resources at the individual level. These results represent the upper bound of the effect of family policies.

All family policy variables in Table 5, except for maternity leave duration, are significant and positive for both math and science achievement. Since the main effect of single-parenthood is negative, these positive coefficients suggest that with greater values of these family policy variables there is a smaller achievement gap between children from single-parent families and those from two-parent homes. Put differently, in countries where child allowances or tax benefits are high, the academic disadvantage of children with single parents is relatively low. Similarly, if maternity leave benefits are high, which is a form of income supplement in addition to increasing mother's time in infant care, children from single-parent families perform better in school relative to children from two-parent homes.

Although family policies mediate the influence of single-parenthood on children's academic achievement, their impact is generally small. Take maternity leave benefits for example. The effect of single-parenthood on children's science test score is about -25 (see Model 2 Science, Table 4). An increase of 10 percent in maternity leave benefit reduces this negative effect of single-parenthood by 1.5, a minute amount. However, the impact of family / child allowances is more substantial. An increase in 10 percent of the cash benefits for a family with children, in terms of average male manufacturing wage, the academic disadvantage of living with a single parent reduces by more than two-third in terms of the science test score (16.6/25).

We also examine the influence of the demographic characteristics on the achievement gap. From Table 5 we can see that virtually all demographic variables are significantly and negatively associated with the achievement gap. When a country is characterized by high divorce rates, the prevalence of single-parent families, be they single-mother or single-father families, and the prevalence of teen births, the achievement gap between single-parent and

two-parent families is also greater. The percentage of lone-father families has the highest coefficient. However, it also has the highest standard error. Relative to its standard error, its effect is small. In fact, the estimate of the percentage of lone-parent families is associated with the largest t-statistic.

It is apparent from these HLM regression results that family policy variables are negatively related to demographic factors. In exploratory analyses (not presented) we found moderate negative correlations between family policy characteristics and demographic variables. Not surprisingly, the correlations among some demographic variables are quite high too, particularly between the three types of single-parent measures. The percentage of lone-parent families has strong correlations with all other demographic variables. Therefore, we use the single indicator of the percentage of lone-parent families to represent national demographic contexts in our next HLM analysis.

To confirm that the effect of family policy is not confounded by the demographic context of a nation, we include the percentage of lone-parent families alongside one family policy variable, entered one at a time, in the HLM model. Tables 6 and 7 show the results for math and science achievement, respectively. Each table contains statistical results from 16 HLM analyses, and each row shows coefficients from a single HLM model. We present here only the family policy and demographic variables; other individual variables are controlled but not presented.

Panels 6a (Table 6) and 7a (Table 7) suggest that including the percentage of lone-parent families does not affect the impact of family policy in any major way. The percentage of lone-parent families remains to be significantly and negatively related to the achievement gap. And all family policies, except maternity leave duration, continue to have significant and

positive impact on the achievement gap for both subjects. The impact of maternity leave duration on the math achievement gap has become statistically significant but in the unexpected direction, after including the demographic variable of lone-parent families. While we are puzzled by this result, this significantly negative impact of maternity leave does not hold for the science achievement gap. Nor does it hold in subsequent analyses in panels 6b and 7b.

Panels 6b (Table 6) and 7b (Table 7) tell a comparable story, although the results are less stable because we are running out of the degrees of freedom. Here we replace the percentage of lone-parent families with two demographic variables, which can be seen as the main causes of high percentages of single-parent families: crude divorce rates and the percentage of births born to mothers aged below 20. These two variables have a correlation of .44. Again, we enter these two variables at the country level together with a family policy variable, one at a time. Despite the fact that we are running out of the degrees of freedom, child or family allowances and parental leave are still positive and significantly related to the achievement gap, for both math and science achievement. Judging from the size of the t-values, we can see that the impact of family or child allowances remains to be the largest. Divorce rates also remain its negative effect on the achievement gap, for both math and science achievement.

(Insert Tables 6 and 7 about here)

SUMMARY AND DISCUSSION

Several conclusions can be drawn from our analyses of 11 TIMSS countries. First, there is abundant evidence to show that single-parenthood is associated with lower math and science achievement among young children (equivalent to the 3rd and 4th graders in the U.S.)

than their counterparts in two-parent families. This single- and two-parent family achievement gap is found within each country, as well as all 11 countries combined, for both math and science subjects.

Second, family resources in those countries where the negative impact is observed cannot account for the negative impact of single-parenthood. Having said that, we also note that our measure of family resources is crude. We have information about a child's immigrant status, the number of people the child lives with, and the number of books and possessions the child has at home. These are only proxies for the educational, financial, and social resources parents provide their children.

Third, there are country-level variations in the effect of single-parenthood on children's math and science achievement. For math, the largest performance gap between children from single-parent homes and those from two-parent families is found in the U.S. For science achievement, it is found in both the U.S. and New Zealand. In other words, the U.S. consistently ranks last among the 11 developed countries in terms of the equality of school performance between children from these two types of family.

After controlling for family resources and other demographic variables, the performance gap in the U.S. shrinks for both school subjects. Nevertheless, the math performance gap in the U.S. is still larger than that in Austria, Iceland, Ireland, and the Netherlands; and the science performance gap in the U.S. remains greater than Austria, Australia, Iceland, Ireland, the Netherlands, and Norway.

In this research, we began with the expectation that living with a single-parent is less detrimental in countries with greater investment in family policies. We did find, from our multilevel analysis, that the influence of single-parenthood is less detrimental in nations with

strong family policy aiming at equalizing economic resources between single-parent and other families. However, this impact of family policy on the achievement gap is generally small, with family/child allowances and parental leave as positive exceptions. Family or child allowances can make a difference in the disposable income of single-parent families, and thus decrease the detriment of children with single parents. Overall, the U.S. is clearly behind the other industrialized countries in providing financial assistance to poor and single-parent households, in the form of tax benefits, family transfers, and maternity leave benefits. The U.S. does not provide family or child allowances. To some extent this explains, in part, why the U.S. also ranks last on the academic resilience of children from single-parent homes. The same can be said about the quality and the generosity of parental leave packages.

There is systematic relationship between the prevalence of single-parent families and the achievement gap between children from two- and single-parent homes. The achievement gap is greater in countries where single-parent families are more common. The result is consistent with our expectation that when single-parent families are prevalent, more of these families are a result of marital dissolution due to only moderate dissatisfaction of an individual's marriage. Parental conflict in these families is low prior to divorce. As a consequence the impact of the unexpected divorce on children is large. In other words, children from single-parent families are worse off academically in a society with many single-parent families than they are in a society with few single-parent families. This result corroborates the previous finding that schools with high concentration of children from single-parent families also have a negative impact on students' academic achievement (Pong, 1997).

During American political campaigns in recent decades, much public discussion of welfare has often ended with a caveat. That is, family or welfare policies might reinforce "undesirable" behavioral patterns and by creating nontraditional domestic units dependent on public welfare. Our analyses appear to refute this caveat. We found that family policies are negatively correlated with the percentage of nontraditional families. For example, the U.S. has the least generous welfare system, and hardly any national family policies, yet its divorce rates are high, single-parent families, and teen births are the most prevalent among all the countries we study. On the other hand, family and welfare policies, especially family and child allowances, have compensating effects for the negative consequences of living in single-parent families.

What seems apparent already, from the limited cross-national study offered here, is that the deleterious effect of single-parenthood on children's education, so widely noted in the United States and elsewhere, is not a necessary consequence of single-parenthood. Economic assistance to the children in single-parent homes, in the form of family or child allowances or parental leave, for instance, can offset partly these detrimental consequences. Public welfare policies can make a difference for children, especially for those in difficult situations.

References

Amato, P.R. (2001). Children of divorce in the 1990s: An update of the Amato and Keith (1991) meta-analysis. *Journal of Family Psychology, 15,* 355-370.

Amato, P.R., Loomis, L.S., & Booth, A. (1995). Parental divorce, marital cnflict, and offspring well-being during early adulthood. *Social Forces*, 73, 895-915.

Amato, P. R., & Keith, B. (1991). Parental divorce and adult well-being: A meta-analysis. *Journal of Marriage and the Family*, 53, 43-58.

Astone, N. M., & McLanahan, S. S. (1991). Family structure, parental practices and high school completion. *American Sociological Review* 56, 309-320.

Baker, M. (1995). *Canadian family policies: Cross-national comparisons.* Toronto: U. of Toronto Press.

Bertelsmann Foundation. (2001, April). *International reform monitor: Social Policy, Labour Market Policy and Industrial Relations*. (Issue 4).

Bogenschneider, K. (2000). Has family policy come of age? A decade review of the state of U.S. family policy in the 1990s. *Journal of Marriage and the Family*, 62, 1136-1159.

Booth, A. (1999). Causes and consequences of divorce:Reflections on recent research. In R.A. Thompson & P.R. Amato (Eds.), *The postdivorce family: Children, parenting, and society* (pp. 3-28). Thousand Oaks, CA: Sage.

Borgers. N., Dronkers, J., & Van Praag, B. M. S. (1996). The effects of different forms of two- and single-parent families on the well-being of their children in Dutch secondary education. *Social Psychology of Education*, 1, 147-169.

Bosman, B., & Louwes, W. (1982). School careers of children from one-parent and two-parent families: an empirical inquiry into the effects of belonging to a one-parent family on the educational attainment of children. *Netherlands' Journal of Sociology, 24*, 98-116.

Bradshaw, J., Kennedy, S., Kilkey, M., Hutton, S., Corden, A., Eardley, T., Holmes, H. & Neale, J. (1996). *The employment of lone parents: a comparison of policy in 20 countries.* Joseph Rowntree Foundation: Family Policy Studies Centre.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis*. Newbury Park: Sage Publications.

Cherlin, A. J., Furstenberg, F. F., Chase-Lansdale, P. L., Kiernan, K. E., Robins, P. K., Morrison, D. R. & Teitler, J. O. (1991). Longitudinal studies of effects of divorce on children in Great Britain and the United States. *Science*, 252, 1386-1389.

Coleman, J. S. (1988). Social capital in the creation of human capital. American *Journal of Sociology, 94*, S95-S120.

Coleman, J. S., Campbell, E., Hobson, C., McPartland, J., Mood, A., Weinfeld, F. D., & York, R. (1966). *Equality of Educational Opportunity.* Washington, DC: U.S. Department of Health, Education & Welfare.

The Clearinghouse on International Developments in Child, Youth and Family Policies. (n.d.). Retrieved February 20, 2002, from http://www.childpolicyintl.org/.

Cooksey, E.C. (1997). Consequences of young mothers' marital histories for children's cognitive development. *Journal of Marriage and the Family, 59*, 245-262.

Cornia, G. A. & Danziger, S. (1997). *Child poverty and deprivation in industrialized countries 1945-1995.* Oxford: Clarendon Press.

BEST COPY AVAILABLE

Crosby, A. (1986). *Ecological imperialism: The biological expansion of Europe, 900-1900.* Cambridge: Cambridge U. Press.

de Bie, P. J.L. (1980). The rationale and social context of family policy in western Europe. In J. Aldous, & W. Dumon (Eds.), *The politics and programs of family policy: United States and European perspectives.* Indiana: University of Notre Dame Press.

Downey, D. B. (1994). The school performance of children from single-mother and single-father families: Economic or interpersonal deprivation? *Journal of Family Issues*, 15, 129-147.

Dronkers, J. (1994). The changing effects of lone families on the educational attainment of their children in a European welfare state. *Sociology*, 28, 171-192.

Dronkers, J. (1999). The effects of parental conflicts and divorce on the well-being of pupils in Dutch secondary education. *European Sociological Review*,15(2), 195-212.

Engelhardt, H., H. Trappe en J. Dronkers, 2002. "Differences and Family Policy and the Intergenerational Transmission of Divorce: A Comparison between the former East and West Germany." *Demographic Research* 6:296-324.

Entwisle, D. R., & Alexander, K. L. (1995). A parent's economic shadow: Family structure versus family resources as influences on early school achievement. *Journal of Marriage and the Family, 57*, 399-409.

Entwisle, D. R., Alexander, K. L. & Steffel-Olson, L. (1997). Children, Schools, and Inequality. California: Westview Press.

Eydal, G.B. (1997, October). *Lone mothers in Iceland: Work and welfare.* Paper presented at Atbetsseminariet forskning om välfärdsstat och politik, Lökeberg.

Gauthier, A. H. (1996). *The state and the family: Comparative analysis of family policies in industrialized countries.* Oxford: Clarendon Press.

Hanson, T.L. (1999). Does parental conflict explain why divorce is negatively associated with child welfare? *Social Forces*, 77, 1283-1316.

Harris, K. M., Cavanagh, S. & Elder, G. H. (2000). *The well-being of adolescents in single-father context.* Paper presented at the annual meeting of the Population Association of America, Los Angles, CA.

Jencks, C., & Mayer, S. E. (1990). The social consequences of growing up in a poor neighborhood. In L. Laurence, Jr., and M. G.H. McGeary (Eds.), *Inner-City Poverty in the United States* (pp. 111-186). Washington D.C.: National Academy Press.

Jekielek, S.M. (1998). Parental conflict, marital disruption and children's emotional well-being. *Social Forces*, 76, 905-935.

Joshi, H., Cooksey, E.C., Wiggins, R.D., McCulloch, A., Verropoulou, G., & Clarke, L. (1999). Diverse family living situations and child development: A multilevel analysis comparing longitudinal evidence from Britain & the USA. *International Journal of Law, Policy and the Family, 13,* 292-314

Kamerman, S. B., & Kahn, A. (Eds.). (1997). *Family change and family policies in Great Britain, Canada, New Zealand, and the United States.* Oxford: Clarendon Press.

Kennedy, F., & McCormack, K. (1997). Ireland: Marriage loses popularity. In F. Kaufmann, A. Kuijsten, H. Schulze, & K. P. Strohmeier (Eds.), *Family life and*

family policies in Europe, vol. I: Structure and trends in the 1980s. Oxford: Clarendon Press.

Kiernan, K. E. (1992). The impact of family disruption in childhood on transition made in young adult life. *Population Studies*, 46, 213-234.

Kjellin, B. T.M. (1980). New trends and changes in Nordic family law. In J. Aldous, & W. Dumon, (Eds.), *The politics and programs of family policy: United States and European Perspectives*. Indiana: U. of Notre Dame Press.

Knijn, T. (1994). Fish without bikes: revision of the Dutch welfare state and its consequences for the (in)dependency of single mothers. *Social Politics. International Studies in Gender, State & Society*. 1(1): 83-105.

Kuijsten, A., & Schulze, H. J. (1997). The Netherlands: The latent family. In F. Kaufmann, A. Kuijsten, H. J. Schulze, & K. P. Strohmeier (Eds.), *Family life and family policies in Europe, vol. I: Structure and trends in the 1980s*. Oxford: Clarendon Press.

Lee, S. (1993). Family structure effects on student outcomes. In B. Schneider & J. S. Coleman (Eds.), *Parents, their children, and schools* (pp. 43-75). Boulder, CO: Westview Press.

Lesthaeghe, R. (2000). *Europe's demographic issues: Fertility, household formation, and replacement migration*. Joint conference of the British Society for Population Studies and the Nederlandse Vereniging voor Demografie, the University of Utrecht, Utrecht, 31 August - 1 September 2000.

Li, J. H., & Wojtkiewicz, R. A. (1992). A new look at the effects of family structure on status attainment. *Social Science Quarterly*, 73, 581-595.

McLanahan, S. S. (1985). Family structure and the reproduction of poverty. *American Journal of Sociology*, 9, 873-901.

McLanahan, S. S., & Sandefur, G. (1994). *Growing up with a single-parent: What hurts, what helps?* Cambridge: Harvard University Press.

McNab, C., & Murray, A. (1985). Family composition and mathematics achievement. *Scandinavian Journal of Educational Research, 34*, 3-28.

Morrison, D. R., & Coiro, M. J. (1999). Parental conflict and marital disruption: Do children benefit when high-conflict marriages are dissolved? *Journal of Marriage and the Family*, 61, 626-637.

Murray, A. & Sandqvist, K. (1990). Father absence and children's achievement from age 13 to 21. *Scandinavian Journal of Educational Research*, 29, 89-102.

Oggenfuss, F. (1984). Jugendliche aus scheidungsfamilien. (Youth and divorced families). *Familiendynamiek*, 9, 71-83.

Peters, J. B. M. (1980). An evaluation of the effects of family policy in Europe. In J. Aldous, & W. Dumon (Eds.), *The politics and programs of family policy: United States and European perspectives.* Indiana: U. of Notre Dame Press.

Phipps, S. (1999). *An international comparison of policies and outcomes for young children.* Canadian Policy Research Networks Inc.: CPRN Study No. F/05.

Pong, S.-L. (1997). Family structure, school context, and eighth-grade math and reading achievement. *Journal of Marriage and the Family*, 59, (3),734-746.

Pong, S.-L, & Ju, D. -B. (2000). The effects of change in family structure and income on dropping out of middle and high school. *Journal of Family Issues, 21*, (2), 147-169.

Pringle, K. (1998). *Children & Social Welfare in Europe.* Philadelphia: Open University Press.

Sandefur, G. D., McLanahan, S., & Wojtkiewicz, R. A. (1992). The effects of parental marital status during adolescence on high school graduation. *Social Forces, 71,* 103-121.

Shavit, Y., & Blossfield, H. P. (Eds.). (1993). *Persistent inequality: Changing educational stratification in thirteen countries.* Boulder, Colorado: Westview.

Smith, J. R., Brooks-Gunn J., & Klebanov, P.K. (1997). Consequences of living in poverty for young children's cognitive and verbal ability and early school achievement. In G. J. Duncan & J. Brooks-Gunn (Eds.), *Consequences of Growing Up Poor* (pp. 132-189). New York: Russell Sage Foundation.Snijders.

T & Bosker, R. (1999). *Multilevel Analysis. An introduction to basic and advanced multilevel modeling.* California: Sage Publications.

Steinberg, L. (1996). *Beyond the classroom: Why school reform has failed and what parents need to do.* New York: Touchtone Books.

Teachman, J. D., Paasch, K., & Carver, K. (1996). Social Capital and Dropping Out of School Early. *Journal of Marriage and the Family, August,* 773-783

United Nations Development Programme (2000) *Human Development Report 2000.* New York: Oxford University Press.

Van Wel, F. & T. Knijn, 2001, The Labor Market Orientation of Lone Mothers in the Netherlands. *Journal of Marriage and the Family. 63,* 804-815.

Van Drenth, A., T. Knijn, T., & Lewis, J. (1999). Sources of income for lone mother families: policy changes in Britain and the Netherlands and the experience of divorced women. *Journal of Social Policy. 28*, 619-641.

Zill, N. (1996). Family change and student achievement: What we have learned, what it means for schools? In A. Booth & J.F. Dunn (eds.), *Family-school links: How do they affect educational outcomes* (p.139-174), NJ: Lawrence Erlbaum Associates, Publishers.

Table 1

Percentages of two-parent, single-parent, step-parent, and guardian families, children from TIMSS population 1

Region/Countries	Two-parent Family	Single-Parent Family: mother only	Single-Parent Family: father only	Stepfamily	Guardian
North America					
Canada	73	16	2	7	2
United States	70	17	2	9	2
Pacific Rim					
Australia	76	15	2	6	1
New Zealand	74	14	3	4	5
North/West Europe					
Austria	81	13	1	3	2
England	78	14	2	6	1
Ireland	89	8	1	1	1
Scotland	77	17	1	4	1
Iceland	66	20	2	7	6
Netherlands	91	6	1	2	0
Norway	81	11	2	5	1

Note: All percentages are weighted.

Table 2
Family policies by country

Country-level variables[a]	AUT	AUS	CAN	GRB	IRL	NLD	NZL	NOR	SCO	USA
Family / Child allowance	11.3	3.4	2.4	6.3	3.0	7.4	2.1	9.1	6.3	0
Universal Child benefits to lone parents	124	42	0	107	38	96	0	169	107	0
Benefits in tax & security to lone parents	0	-12	---	0	0	26	0	-16	0	-24
Family Transfers per Child	1012	511	318	855	217	914	603	684	855	232
Social Expenditure per GDP	19.9	17.7	25.3	27.6	25.2	34.4	19.8	35.5	27.6	20.1
Maternity leave benefits (%)	100	0	55	45	70	100	0	100	45	0
Maternity leave in weeks	16	52	15	18	14	16	14	38	18	12
Parental leave	2	0	---	0	0	1	0	2	0	0

Note: AUT=Austria, CAN=Canada, AUS=Australia, GRB=England, IRL=Ireland, NLD=Netherlands, NZL=New Zealand, NOR=Norway, SCO=Scotland, USA=United States. All variables, except maternity leave and its benefits, are missing for Iceland. In Iceland, maternity leave are 24 weeks with 100 percent benefits.
[a] See Appendix A for the metric of each variable.

Table 3
Single-country analysis of the effect of single-parent family on math and science achievement

Countries	Model 1		Model 2	
	Coefficient	Effect size[a]	Coefficient	Effect size
		Math Achievement		
AUSTRALIA	-20.99 **	.22	-21.16 **	.22
Austria	2.01	.02	.77	.01
Canada	-21.96 **	.25	-17.79 **	.20
England	-19.55 **	.21	-14.92 **	.16
Iceland	-.23	.00	-.67	.01
Ireland	-12.01 **	.13	-7.39 +	.08
Netherlands	-9.49 *	.12	-7.70 +	.10
New Zealand	-23.66 **	.26	-14.30 **	.16
Norway	-20.31 **	.24	-11.81 **	.14
Scotland	-18.98 **	.21	-13.16 **	.15
United States	-29.77 **	.33	-24.57 **	.27
		Science Achievement		
Australia	-16.47 **	.17	-18.92 **	.19
Austria	4.43	.05	2.99	.03
Canada	-23.46 **	.26	-19.55 **	.21
England	-21.65 **	.21	-15.32 **	.15
Iceland	-.64	.01	-.36	.00
Ireland	-3.98	.04	-1.23	.01
Netherlands	-5.73	.08	-3.54	.05
New Zealand	-31.38 **	.31	-22.95 **	.22
Norway	-14.89 **	.15	-9.50 *	.10
Scotland	-19.72 **	.20	-15.42 **	.16
United States	-35.23 **	.36	-28.20 **	.29

Note: Model 1 includes the family structure variables, age, gender, and grade level. Model 2 includes all variables in Model 1, as well as variables that proxy family resources (number of books, number of items, immigrant status, and household size).
[a]Standard deviation of the test score for each country is shown in Appendix B.
+p<.10, *p<.05, **p<.01.

Table 4

Regression analysis of math and science achievement in 11 countries

	Math		Science	
Variables	Model 1	Model 2	Model 1	Model 2
Intercept	495.46 **	443.40 **	529.52 **	469.78 **
Family structure				
(ref: two parents)				
Single-parenthood	-29.01 **	-22.19 **	-33.66 **	-25.42 **
Stepfamily	-25.30 **	-18.20 **	-26.17 **	-17.37 **
Guardian family	-29.12 **	-19.84 **	-33.42 **	-23.03 **
Control variables				
Age 6-8	-13.16 **	-14.86 **	-8.46 *	-9.10 **
Age 11-17	-2.30 +	1.35	-3.02 *	1.46
Gender: being girl	-6.25 **	-6.53 **	-9.21 **	-9.87 **
upper grade	65.81 **	61.77 **	56.61 **	51.18 **
Family Resources				
Number of books		12.04 **		17.19 **
Number of possessions		4.09 **		3.96 **
Immigrant status		-11.65 **		-17.11 **
Household size		-5.37 **		-7.15 **
Country (ref: U.S.A.)				
Australia	-2.03	9.93 **	-8.78 **	.62
Austria	2.62	14.36 **	-14.00 **	-.35
Canada	-16.97 **	.75	-24.18 **	-7.50 **
England	-34.33 **	-25.07 **	-20.48 **	-11.41 **
Iceland	-75.08 **	-61.25 **	-74.26 **	-60.95 **
Ireland	-5.64 **	-2.13	-37.20 **	-26.22 **
Netherlands	15.22 **	34.29 **	-20.50 **	-1.58
New Zealand	-42.81 **	-42.24 **	-34.86 **	-33.69 **
Norway	-56.34 **	-52.90 **	-55.19 **	-52.31 **
Scotland	-26.10 **	5.14 **	-33.05 **	-2.50
Interaction: Single-parenthood x Country				
(ref: U.S.A)				
Australia	8.23 +	3.03	17.37 **	10.08 *
Austria	31.15 **	21.28 **	37.79 **	25.48 **
Canada	7.01 +	5.05	9.87 *	5.73
England	10.40 *	4.19	12.92 **	5.98
Iceland	25.34 **	19.16 **	29.40 **	21.72 **
Ireland	15.70 **	11.57 *	29.17 **	23.12 **
Netherlands	17.50 **	11.68 *	29.75 **	18.52 **
New Zealand	7.58 +	7.83 +	3.76	3.26
Norway	8.44 *	6.43	18.38 **	13.32 **
Scotland	10.57 **	5.22	14.62 **	7.39 +
R-square	.20	.26	.13	.22
Number of Observations	72,602	68,200	72,602	68,200

+ p<.10, * p < .05, ** p < .01

Table 5

HLM analysis of the impact of a single family policy or a demographic characteristic on the regression slope of single-parenthood, for math and science achievement

Country-level variables	Math	Science
Family Policy		
Family / Child allowances	1.19 **	1.66 **
Universal child benefits to lone parents	.04 **	.08 **
Benefits in tax & security to lone parents	.30 **	.36 **
Family Transfers per Child	.01 **	.01 **
Social Expenditure per GDP	.55 **	.67 **
Maternity leave benefits	.12 **	.15 **
Maternity leave in weeks	.05	.11 +
Parental leave	5.55 **	7.03 **
Demographic Context		
% Lone-parent families	-.72 **	-1.30 **
% Lone-mother families	-.86 **	-1.58 **
% Lone-father families	-2.81 **	-5.97 **
Crude divorce rates	-3.70 **	-4.41 **
% Births to mothers under 20	-1.12 **	-1.82 **

Note: Each coefficient comes from an HLM model in which the corresponding family policy or demographic variable, and all individual-level variables are included.

** $p < .01$, + $p < .10$.

Table 6

HLM analysis of the impact of both family policy and demographic characteristics on the regression slope of single-parenthood, for math achievement

Country-level variables	% Lone-par family	Divorce rates	% Teen births
6a: Effects of one family policy variable and % of lone-parent family			
Family / Child allowances	.85 **	-.40 +	
Universal child benefits to lone parents	.02	-.61 **	
Benefits in tax & security to lone parents	.16	-.51 *	
Family Transfers per Child	.01 *	-.58 **	
Social Expenditure per GDP	.36 *	-.58 **	
Maternity leave benefits	.07 *	-.40 +	
Maternity leave in weeks	-.15 *	-.87 **	
Parental leave	4.24 **	-.54 **	
6b: Effects of one family policy variable, divorce rates, and % of births to mothers <20			
Family / Child allowances	.89 *	-2.15 *	-.00
Universal child benefits to lone parents	.02	-2.36 **	-.40
Benefits in tax & security to lone parents	.05	-2.33 *	-.52
Family Transfers per Child	.01 *	-2.51 **	-.24
Social Expenditure per GDP	.10	-2.11 *	-.55 +
Maternity leave benefits	.07 +	-1.38	-.30
Maternity leave in weeks	-.08	-2.10	-.90 +
Parental leave	3.65 *	-2.28 *	-.23

Note: Each row represents one HLM model in which the corresponding family policy variable, demographic variable, and all individual-level variables are included.
** $p < .01$, * $p<.05$, + $p<.10$.

Table 7.
HLM analysis of the impact of both family policy and demographic characteristics on the regression slope of single-parenthood, for science achievement

Country-level variables	% Lone-par family	Divorce rates	% Teen births
7a: Effects of one family policy variable and % of lone-parent family			
Family / Child allowances	.82 *	-.99 **	
Universal child benefits to lone parents	.04 *	-1.13 **	
Benefits in tax & security to lone parents	.03	-1.39 **	
Family Transfers per Child	.01	-1.19 **	
Social Expenditure per GDP	.29	-1.19 **	
Maternity leave benefits	.05 +	-1.06 **	
Maternity leave in weeks	-.04	-1.34 **	
Parental leave	4.21 **	-1.16 **	
7b: Effects of one family policy variable, divorce rates, and % of births to mothers <20			
Family / Child allowances	.89 *	-1.87 *	-.77 +
Universal child benefits to lone parents	.03 +	-2.09 *	-1.03 **
Benefits in tax & security to lone parents	-.16	-3.32 **	-1.59 **
Family Transfers per Child	.00	-2.16 *	-1.14 **
Social Expenditure per GDP	-.01	-2.08 +	-1.36 **
Maternity leave benefits	.06	-1.24	-1.11 **
Maternity leave in weeks	.16	-4.17 **	-.71
Parental leave	2.92 +	-2.43 *	-1.06 **

Note: Each row represents one HLM model in which the corresponding family policy variable, demographic variable, and all individual-level variables are included.
** $p < .01$, * $p<.05$, + $p<.10$.

Figure 1. The relationship between family policy, demographic contexts, family situation, and child achievement outcomes

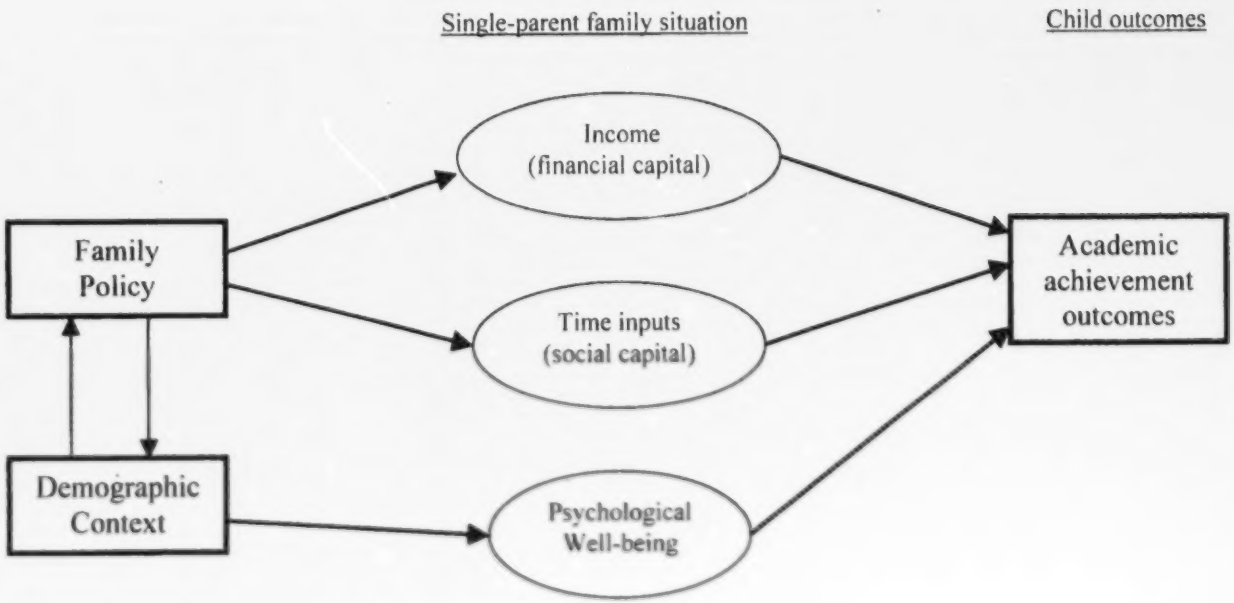


Figure 2. Crude divorce rates and the percentage of teen births, by countries.

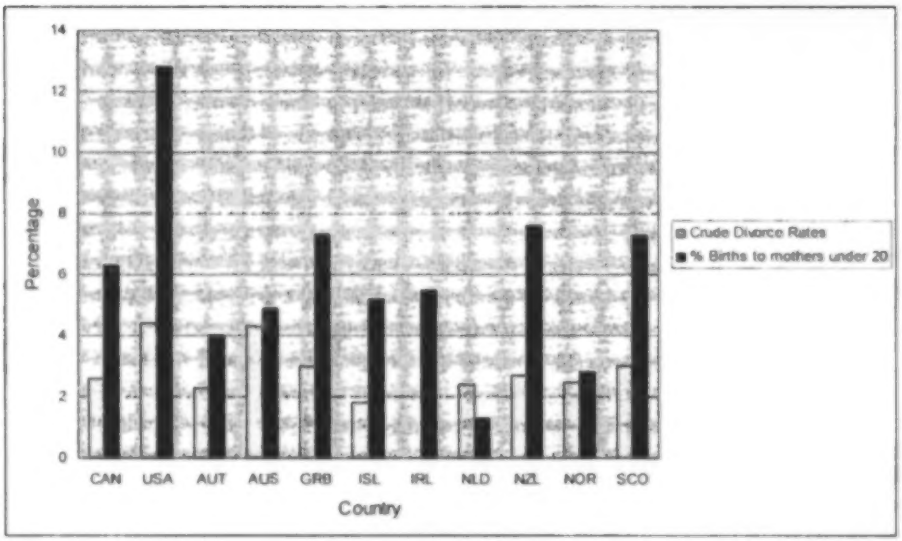
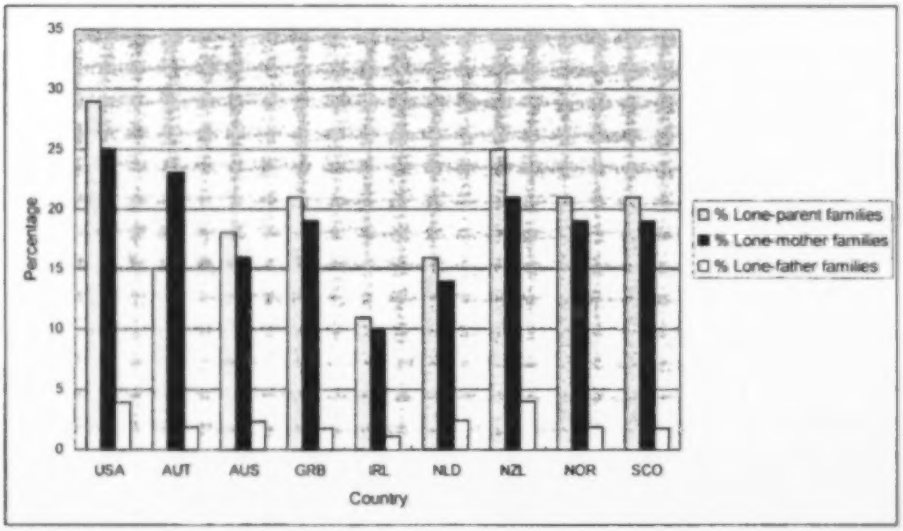


Figure 3. The percentage of lone-parent, lone-mother, and lone-father Families, by countries.



Appendix A. Description of country-level variables.

Country-level variables	Description	Source
Family Policy Variables		
Family / Child allowances	Cash benefits for a family with two children, as the percentage of average male manufacturing wage in 1990.	Gauthier (1996), Table 10.1, p. 166
Universal child benefits to lone parents	Monthly values of non-means-tested child benefits paid to a lone parent with 2 children aged 7 and 8, relative to average male earnings, in Sterling purchasing power parities, 1994.	Bradshaw et al. (1996), Table 5.1. Figure for Canada comes from Phipps (1999), p.57
Benefits in tax & security to lone parents	Differences in tax and social security per month paid by lone parents as compared with the payments by married couples, in Sterling purchasing power parities, 1994, for parents with average earnings and with two children aged 7 and 8.	Bradshaw et al. (1996), Table 5.4
Family transfers per child	Family transfers in cash per child under 15 years of age in 1984.	Cornia & Danziger, Table 4.3
Social Expenditure per GDP	Government social expenditure as percentage of GDP, 1990	Cornia & Danziger, Table 4.1
Maternity leave benefits	Benefits as a percentage of female worker salary, 1996.	Lesthaeghe (2000)
Maternity leave in weeks	Maternal leave duration in weeks. Figures for the US and Norway, and Iceland are given in 2001. For all other countries, the figures are given in 1996	Lesthaeghe (2000) Table 4; Figure for Canada is from Phipps (1999), p.58; for Iceland, Eydal (2001); for USA and Norway, The Clearinghouse (2001)
Parental leave	The generosity of the package of leave (for either mother or father) arrangements indicated by high, medium, or low.	Bradshaw et al. (1996), Table 4.4
Demographic Variables		
% Lone-parent families	Lone-parent families as a percentage of all families in the early 1990	Bradshaw et al. (1996), Table 1.2. Figure for Canada (20%) comes from Baker (1995)
% Lone-mother families	Lone-mother families as a percentage of all families in the early 1990	Bradshaw et al. (1996), Table 2.1
% Lone-father families	Lone-father families as a percentage of all families in the early 1990	Bradshaw et al. (1996), Table 2.1

Appendix A, cont.

Country-level variables	Description	Source
Crude divorce rates	Divorce per 1,000 average population, 1994	Demographic Yearbook (1996), Table 14
% Births to mothers under 20	Births to mothers under 20 as a percentage of all births in 1993-1998	Human Development Report (2000)

Appendix B. Weighted means and standard deviations of science and math scores for 11 countries

Country	Math		Science		N
	Mean	Std	Mean	Std	
Australia	515.6	96.2	536.7	99.0	11,248
Austria	524.2	88.5	535.6	88.9	5,171
Canada	501.5	86.9	520.5	91.8	16,002
England	484.7	93.6	525.4	101.7	6,182
Iceland	441.9	76.7	470.1	90.4	3,507
Ireland	513.5	91.1	509.8	91.4	5,762
Netherlands	535.0	79.7	527.9	70.8	5,314
New Zealand	470.3	91.1	503.2	102.5	4,925
Norway	461.9	83.3	490.6	96.7	4,476
Scotland	489.1	90.2	509.7	97.7	6,433
United States	511.8	89.6	538.1	98.2	11,115

Appendix C: HLM analyses without control for family resources at the first or individual level.

Table C.1 *HLM analysis of the impact of family policy and demographic characteristics on the regression slope of single-parenthood, for math and science achievement, controlling for family structure and individual control variables* (analogous to table 5, but without family resources)

Country-level variables	Math	Science
Family Policy		
Family / Child allowances	1.92 **	2.57 **
Universal child benefits to lone parents	.08 **	.12 **
Benefits in tax & security to lone parents	.46 **	.56 **
Family Transfers per Child	.19 **	.02 **
Social Expenditure per GDP	.75 **	.97 **
Maternity leave benefits	.16 **	.20 **
Maternity leave in weeks	.02	.20 **
Parental leave	7.30 **	9.56 **
Demographic Context		
% Lone-parent families	-1.17 **	-1.91 **
% Lone-mother families	-1.40 **	-2.29 **
% Lone-father families	-5.44 **	-9.36 **
Crude divorce rates	-4.39 **	-5.47 **
% Births to mothers under 20	-1.71 **	-2.69 **

Note: Each coefficient comes from an HLM model in which the corresponding family policy or demographic variable, and the individual-level variables (except family resources) are included.
** $p < .01$.

Table C.2 *HLM analysis of the combined impact of family policy and demographic characteristics on the regression slope of single-parenthood, for math achievement, controlling for family structure and individual control variables* (analogous to table 6, but without family resources)

Country-level variables	% Lone-par family	Divorce rates	% Teen births
2a: Effects of one family policy variable and % of lone-parent family			
Family / Child allowances	1.38 **	-.64 **	
Universal child benefits to lone parents	.05 **	-.95 **	
Benefits in tax & security to lone parents	.20 +	-.94 **	
Family Transfers per Child	.01 **	-.90 **	
Social Expenditure per GDP	.42 *	-1.01 **	
Maternity leave benefits	.07 *	-.83 **	
Maternity leave in weeks	-.13 *	-1.29 **	
Parental leave	4.89 **	-.99 **	

BEST COPY AVAILABLE

2b: Effects of one family policy variable, divorce rates, and % of births to mothers <20

Family / Child allowances	1.57 **	-1.74 +	-.18
Universal child benefits to lone parents	.05 *	-2.12 *	-.78 *
Benefits in tax & security to lone parents	.13	-2.02 +	-1.03 **
Family Transfers per Child	.01 **	-2.40 **	-.56
Social Expenditure per GDP	.19	-1.63	-1.15 **
Maternity leave benefits	.10 **	-.65	-.81 *
Maternity leave in weeks	-.08	-1.90	-1.53 **
Parental leave	3.84 *	-2.34 *	-.84 *

Note: Each row represents one HLM model in which the corresponding family policy variable, demographic variable, and the individual-level variables (except family resources) are included.
** p < .01, * p<.05, + p<.10.

Table C.3: *HLM analysis of the combined impact of family policy and demographic characteristics on the regression slope of single-parenthood, for science achievement, controlling for family structure and individual control variables* (analogous to table 7, but without family resources)

Country-level variables		% Lone-par family	Divorce rates	% Teen births
3a: Effects of one family policy variable and % of lone-parent family				
Family / Child allowances	1.42 **	-1.37 **		
Universal child benefits to lone parents	.07 **	-1.62 **		
Benefits in tax & security to lone parents	.01	-1.98 **		
Family Transfers per Child	.01 **	-1.68 **		
Social Expenditure per GDP	.40 *	-1.76 **		
Maternity leave benefits	.06 *	-1.62 **		
Maternity leave in weeks	-.01	-1.92 **		
Parental leave	5.34 **	-1.74 **		
3b: Effects of one family policy variable, divorce rates, and % of births to mothers <20				
Family / Child allowances	1.55 **		-1.49	-1.23
Universal child benefits to lone parents	.06 **		-1.87 +	-1.70 **
Benefits in tax & security to lone parents	-.10		-3.08 **	-2.41 **
Family Transfers per Child	.01 *		-2.05 *	-1.78 **
Social Expenditure per GDP	.10		-1.58	-2.23 **
Maternity leave benefits	.09 *		-.42	-1.88 **
Maternity leave in weeks	.15		-3.92 *	-1.64 **
Parental leave	3.30 +		-2.43 *	-1.93 **

Note: Each row represents one HLM model in which the corresponding family policy variable, demographic variable, and the individual-level variables (except family resources) are included.
** p < .01, * p<.05, + p<.10.

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

UD035183

REPRODUCTION RELEASE

(Specific Document)

I. DOCUMENT IDENTIFICATION:

Title: Family Policy Policies and Academic Achievement by Young Children in Single-Parent Families: An International Comparison	
Author(s): Suet-ling Pong, Jaap Dronkers, Gillian Hampden-Thompson	
Corporate Source: Population Research Institute, Penn State Univ.	Publication Date:

II. REPRODUCTION RELEASE:

In order to disseminate as widely as possible timely and significant materials of interest to the educational community, documents announced in the monthly abstract journal of the ERIC system, *Resources in Education* (RIE), are usually made available to users in microfiche, reproduced paper copy, and electronic media, and sold through the ERIC Document Reproduction Service (EDRS). Credit is given to the source of each document, and, if reproduction release is granted, one of the following notices is affixed to the document.

If permission is granted to reproduce and disseminate the identified document, please CHECK ONE of the following three options and sign at the bottom of the page.

The sample sticker shown below will be affixed to all Level 1 documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

Level 1

☐

Check here for Level 1 release, permitting reproduction and dissemination in microfiche or other ERIC archival media (e.g., electronic) and paper copy.

The sample sticker shown below will be affixed to all Level 2A documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

Level 2A

☑

Check here for Level 2A release, permitting reproduction and dissemination in microfiche and in electronic media for ERIC archival collection subscribers only

The sample sticker shown below will be affixed to all Level 2B documents

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

Sample

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2B

Level 2B

☐

Check here for Level 2B release, permitting reproduction and dissemination in microfiche only

Documents will be processed as indicated provided reproduction quality permits.
If permission to reproduce is granted, but no box is checked, documents will be processed at Level 1.

I hereby grant to the Educational Resources Information Center (ERIC) nonexclusive permission to reproduce and disseminate this document as indicated above. Reproduction from the ERIC microfiche or electronic media by persons other than ERIC employees and its system contractors requires permission from the copyright holder. Exception is made for non-profit reproduction by libraries and other service agencies to satisfy information needs of educators in response to discrete inquiries.

Sign here, → please

Signature: Suet-ling Pong	Printed Name/Position/Title: Associate Professor
Organization/Address: Penn State University, 310 Raeber Building	Telephone: 814-865-1488 FAX: 814-865-1480
	E-Mail Address: pong@pop.psu.edu Date: 8/19/03

(over)

III. DOCUMENT AVAILABILITY INFORMATION (FROM NON-ERIC SOURCE):

If permission to reproduce is not granted to ERIC, *or*, if you wish ERIC to cite the availability of the document from another source, please provide the following information regarding the availability of the document. (ERIC will not announce a document unless it is publicly available, and a dependable source can be specified. Contributors should also be aware that ERIC selection criteria are significantly more stringent for documents that cannot be made available through EDRS.)

Publisher/Distributor:
Address:
Price:

IV. REFERRAL OF ERIC TO COPYRIGHT/REPRODUCTION RIGHTS HOLDER:

If the right to grant this reproduction release is held by someone other than the addressee, please provide the appropriate name and address:

Name: Journal of Marriage and The Family
Address:

V. WHERE TO SEND THIS FORM:

Send this form to the following ERIC Clearinghouse:

ERIC Clearinghouse on Urban Education
Box 40, Teachers College, Columbia University
New York, NY 10027

Telephone: 212-678-3433
Toll Free: 800-601-4868
Fax: 212-678-4012

WWW: http://eric-web.tc.columbia.edu

However, if solicited by the ERIC Facility, or if making an unsolicited contribution to ERIC, return this form (and the document being contributed) to:

ERIC Processing and Reference Facility
4483-A Forbes Boulevard
Lanham, Maryland 20706

Telephone: 301-552-4200
Toll Free: 800-799-3742
FAX: 301-552-4700
e-mail: ericfac@inet.ed.gov
WWW: http://ericfac.piccard.csc.com

EFF-088 (Rev. 2/2000)

POPULATION RESEARCH INSTITUTE
The Pennsylvania State University
601 Oswald Tower
University Park, PA 16802-6411
Phone No. (814) 865-0486

Family Policies and Academic Achievement by Young Children in Single-Parent Families: An International Comparison

By

Suet-ling Pong
Population Research Institute
The Pennsylvania State University
University Park, PA 16802

Jaap Dronkers
Department of Political and Social Science
European University Institute

and

Gillian Hampden-Thompson
Population Research Institute
The Pennsylvania State University
University Park, PA 16802

May 2002

Working Paper 02-03

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL IN MICROFICHE, AND IN ELECTRONIC MEDIA FOR ERIC COLLECTION SUBSCRIBERS ONLY, HAS BEEN GRANTED BY

S. Pong
Population Research Inst

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

2A

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

UD 035 183